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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/711,504	11/14/2000	Tsuyoshi Katoh	325739/99	8052

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EXAMINER

SEFER, AHMED N

ART UNIT PAPER NUMBER

2826

DATE MAILED: 02/07/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/711,504

Applicant(s)

KATOH ET AL.

Examiner

A. Sefer

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01/11/02.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) 8-12 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of Group I in Paper No. 6 is acknowledged.

Specification

2. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: Claims 5-7 which depend on claim 1 recite the limitations "said gate insulating film", "said source and drain electrodes" which have not been introduced in claim 1. There is insufficient antecedent basis for these limitations in the claims.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 2 and 4-7 are rejected under 35 U.S.C. 102(b) as being anticipated by Shindo et al (JP 4 -14261).

Shindo et al. disclose in figs. 2 and 3 a thin film transistor having a back channel electrode 8a, wherein a voltage of a front channel positioned on the side of a gate wiring of said thin film transistor is made equal to a voltage of said back channel positioned on

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the side of a back channel electrode by short-circuiting said back channel electrode to a gate electrode 2 through a contact-hole 7a formed in a location remote from an active region of said thin film transistor by at least five microns (as in claim 4) provided in a portion of a semiconductor layer 10 constituting said thin film transistor.

As to claim 2, Shindo et al disclose (see figs. 2, 3 and 11) a back channel electrode 8a formed of the same material as a material of a pixel electrode 18b connected to one of source and drain electrodes.

As to claim 5, Shindo et al disclose in fig. 3 a passivation film 9 patterned to have a width equal to that of said back channel electrode and said semiconductor layer are provided between said back channel and said gate insulating film 3.

As to claim 6, Shindo et al disclose in fig. 8 a semiconductor layer patterned to have a width equal to that of said source and drain electrodes of said thin film transistor is provided between said source and electrodes and said gate insulating film 3.

As to claim 7, Shindo et al disclose in fig. 9 a semiconductor layer having an ohmic contact layer on the side thereof, which is in contact with said source and drain electrodes.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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6. Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakazawa (JP 4 171779).

Nakazawa discloses in fig. 1 a thin film transistor having a back channel electrode 108, a gate electrode 102 a semiconductor layer 104 constituting said thin film transistor.

Although the prior art does not specifically disclose a contact hole through which a back channel electrode is short-circuited to a gate electrode so that a voltage of a front channel positioned on the side of a gate wiring of said thin film transistor is made equal to a voltage of a back channel positioned on the side of a back channel electrode, it would have been obvious to one skilled in the art at the time the invention was made to connect the back channel electrode to the gate electrode via a through hole to control the characteristics of a large ON to OFF ratio and a large ON current to OFF current ratio.

As to claim 2, Nakazawa discloses in figs. 1 and 2 a back channel electrode 108 is formed of the same material as a material of a pixel electrode 205 connected to one of a source and drain electrodes of said film transistor.

As to claim 3, Nakazawa discloses a pixel electrode is a transparent electrode.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a. Miyamoto et al. US Patent 6,271,540 disclose a TFT with a means for

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preventing back channel effect.

b. Noguchi US Patent 6,285,041 discloses a TFT having a high resistance back channel region.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to A. Sefer whose telephone number is (703) 605-1227.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan J Flynn can be reached on (703) 308-6601.

ANS

February 4, 2002

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